

AMENDMENTS TO THE DRAWINGS

Please amend Figure 2 to include the labels “Oper. Mech.”, “Electr. T/U” and “E/M T/U” associated with numerals 120 (operating mechanism), 130 (electronic trip unit) and 150 (electromagnetic trip unit), respectively. The drawing amendments are described in the application as originally filed. No new matter has been added.

REMARKS / ARGUMENTS

Status of Claims

Claims 1-23 are pending in the application and stand rejected. Applicant has amended Claims 1, 13 and 18, leaving Claims 1-23 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §112, second paragraph, and 35 U.S.C. §103(a), have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Status of Drawings

The drawings are objected to for reasons relating to unlabeled boxes. Applicant has amended Figure 2 to include the labels as requested by the Examiner. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this objection.

Rejections Under 35 U.S.C. §112, Second Paragraph

Claims 1-23 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention.

Regarding Claims 1, 13 and 18, the Examiner comments that Applicant should clarify what is intended by the electromagnetic trip unit being “in signal communication” with each of the plurality of conduction paths, and that Applicant should clarify the specific response intended by the “electronic trip unit being operably responsive to a second multi-cycle waveform of the short circuit current.”

Applicant traverses this rejection for the following reasons.

Applicant has amended independent Claims 1, 13 and 18 as requested by the Examiner.

No new matter has been added as antecedent support may be found in the specification as originally filed, such as at Paragraphs [0026-0027] for example.

In view of the foregoing, Applicant respectfully submits that the claimed subject matter particularly points out and distinctly claims the subject matter that Applicant regards as the invention, and is described in such a manner that reasonably conveys to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection, which Applicant considers to be traversed.

Rejections Under 35 U.S.C. §103(a)

Claims 1-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Aihara et al. (U.S. Patent No. 6,480,082, hereinafter Aihara) in view of Castonguay et al. (U.S. Patent No. 4,884,048, hereinafter Castonguay).

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest *each and every element* of the instant invention. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988) (Emphasis added). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Furthermore, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests *the desirability of the combination*. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (Emphasis added). Applicant respectfully submits that “to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant.” *In re Werner Kotzab*, CITATION (citing: *In re Dance*, 48 USPQ2d 1635, 1637 (Fed. Dir. 1998); *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984). There must also be a *reasonable expectation of success* in modifying or

combining the prior art, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 USPQ2d 1016, 1023 (Fed. Cir. 1996) (Emphasis added). And, there must be some ***degree of predictability*** in showing the reasonable expectation of success. *In re Rinehart*, 189 USPQ 143 (CCPA 1976) (Emphasis added); MPEP §2143.03.

In addition, Applicant respectfully submits that the Examiner cannot establish obviousness where nothing in the references alone or together suggests the claimed invention as ***a solution to the problem disclosed*** in the instant application. That the claimed invention may employ known principles does not itself establish that the invention would have been obvious. *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d at 1462, 221 USPQ 481 at 488. It is not enough to merely consider similar known principles employed by the claimed invention and the prior art, it is the claimed invention as a whole and the problem being solved that must be viewed in light of the prior art.

Regarding independent Claims 1, 13 and 18

Applicant recites, inter alia,

“... wherein the electromagnetic trip unit is configured to be operably responsive to ***a first half-cycle waveform*** of the short circuit current ***prior to*** the electronic trip unit being operably responsive to ***a subsequent second multi-cycle waveform*** of the short circuit current, each of the electromagnetic trip unit and the electronic trip unit being operably responsive by being capable of sending a trip signal to the operating mechanism ***in response to the first half-cycle waveform and the second multi-cycle waveform, respectively.***”

Here, Applicant is claiming an attribute of the invention that is defined by its responsiveness to a first waveform and a second subsequent waveform of a short circuit current.

Contrary to the Examiner’s allegation, Applicant finds the combination of Aihara and Castonguay to be absent any teaching or suggestion of this attribute.

Dependent claims inherit all of the limitations of the respective parent claim.

At paragraph [0026], Applicant describes a problem that may be associated with electronic trip unit 130 that results from the saturation and hysteresis characteristics of current transformer 140, and then describes how the claimed invention solves this problem.

Applicant finds the combination of Aihara and Castonguay to be absent any teaching, suggestion or motivation that is directed to this problem and solution.

In combining Aihara and Castonguay, the Examiner acknowledges that Aihara does not disclose the electronic trip unit being in signal communication with each individual phase and the electromagnetic trip unit being responsive within the first half-cycle and the electronic trip unit being responsive to a second multi-cycle waveform of the short circuit current, looks to Castonguay to cure a portion of this deficiency by disclosing a multiphase breaker having a current transformer for each of the phases, and looks to the knowledge of one of ordinary skill in the art to cure other portions of this deficiency. Paper 022205, page 4.

By looking to the knowledge of one of ordinary skill in the art, the Examiner alleges that it would have been obvious to make the claimed combination in part because the electronic trip unit, in order to detect a fault, would have to either sense a zero-crossing or a time lag, and would have a delayed reaction to the fault. Paper 022205, pages 4-5.

Applicant respectfully disagrees that the combination of Aihara, Castonguay, and the knowledge of one skilled in the art as delineated by the Examiner, would necessarily result in the invention as claimed, with the attributes as claimed.

The claimed invention is directed to a specific first portion of a short circuit current, namely a first half-cycle waveform, and to a specific second subsequent portion of the same short circuit current, namely a subsequent second multi-cycle waveform, and is directed to the responsiveness of the electromagnetic trip unit to the first portion and the electronic trip unit to the second portion.

In comparing Aihara, Castonguay, and the knowledge of one skilled in the art as delineated by the Examiner with the instant invention, Applicant finds no support for a teaching or suggestion of each and every element of the claimed invention having the attributes of the claimed invention. Even if an electronic trip unit had a time lag, the Examiner's combination of References and knowledge of one skilled in the art still falls short of a teaching or suggestion of how that time lag relates to the specific first portion and the specific second subsequent portion of the short circuit current waveform that is specifically claimed for in the instant invention.

The Examiner also alleges that one skilled in the art would look to a sensed zero crossing in an electronic trip unit in combination with Aihara and Castonguay to arrive at the claimed invention. Applicant respectfully disagrees. Not only do the current transformers and the electronic trip unit of the instant invention respond to a di/dt induced voltage rather than a sensed zero crossing to initiate a trip signal, but also, Applicant finds no teaching or suggestion of how the sensed zero crossing relates to the specific first portion and the specific second subsequent portion of the short circuit current waveform that is specifically claimed for in the instant invention.

It is not enough that prior art elements can be combined, or that knowledge of one skilled in the art can be combined therewith. In addition, there must be some motivating force to do what the Applicant has done, and Applicant finds no such motivation from the References as suggested by the Examiner.

If Applicant were to combine Aihara and Castonguay with knowledge of one skilled in the art as suggested by the Examiner, one skilled in the art would still be left with no reasonable expectation of success and with no reasonable degree of predictability of success.

Furthermore, Applicant finds Aihara to be primarily concerned with electrical isolation between an accessory installation area and a main circuit area. Abstract and column 8, lines 40-49. And, Applicant finds Castonguay to be primarily concerned with automatically aligning current transformer pins with a printed circuit board via tapered through holes in an intermediate cover. Column 1, lines 41-46.

In comparing the problems addressed by Aihara and Castonguay with the problem recognized and solved by the instant invention, Applicant finds no teaching, suggestion, or motivation to combine Aihara and Castonguay for the purpose of arriving at the claimed invention, which addresses a problem only recognized and solved by the instant application and claims.

Regarding Claim 2 Specifically

Claim 2 recites, inter alia,

“... the electromagnetic trip unit comprises *a magnetic actuator disposed at*, and in signal communication with, *each of the plurality of conduction paths* such that each magnetic actuator is individually in operable communication with the operating mechanism.”

The Examiner alleges that Aihara discloses the electromagnetic trip unit including an electromagnetic actuator disposed at each of the plurality of phases (Figure 4b). Paper 022205, page 5.

Applicant respectfully disagrees.

At the outset, Applicant finds Figure 4b to disclose only one phase of a multi-phase circuit breaker, and therefore cannot without more teach or suggest each and every element of the claimed invention.

In addition, Applicant finds Aihara to teach interior accessories 80 that are installed on both sides of mechanism portion 3. Column 7, lines 16-20, and Figure 8. With reference to Aihara Figure 8, Applicant submits that interior accessories 80 occupy a space in the multi-phase breaker that electromagnetic trip unit (Figure 3) would want to occupy if there were one electromagnetic trip unit per phase. However, absent a teaching in Aihara of multiple electromagnetic trip units, Applicant submits that Aihara discloses only one electromagnetic trip unit, and therefore cannot properly be used to establish a prima facie case obviousness.

Regarding Claims 11 and 23 Specifically

Claim 11 recites, inter alia,

“... the electromagnetic trip unit comprises *a single trip bar that is common to all of the three phases* within the housing, *each phase of the trip bar having a separate magnetic armature disposed thereat.*”

Claim 23 recites, inter alia,

“... the electromagnetic trip unit comprises *a single trip bar common to all phases* wherein *each phase of the trip bar has a separate magnetic armature disposed thereat.*”

The Examiner alleges that Aihara discloses the electromagnetic trip unit having a trip bar [3] that is common to all of the phases and each phase having a separate armature disposed thereat [column 8, lines 50-67].

Applicant respectfully disagrees.

At the outset, Applicant finds reference numeral [3] of Aihara to be directed to an opening-closing mechanism (Column 8, lines 56-57), which is substantially different from the claimed trip bar of the electromagnetic trip unit of the instant invention.

In addition, while column 8, lines 50-67, may teach an electromagnetic trip unit (stationary core 51 and movable core 52, for example), Applicant finds Aihara to be absent any teaching of *a single trip bar common to all phases* wherein *each phase of the trip bar has a separate magnetic armature disposed thereat*, and the Examiner has not stated with specificity where such a teaching may be found in Aihara.

Contrary to the Examiner's allegation, Applicant finds Aihara to teach a single stationary core 51 and a single movable core 52, and to be absent any teaching of a single trip bar (not opening-closing mechanism) common to all phases wherein each phase of the trip bar has a separate magnetic armature disposed thereat.

If Applicant were to apply Aihara as suggested by the Examiner, one skilled in the art would result in an opening-closing mechanism [3] in combination with a single stationary core 51 and a single movable core 52, which is substantially different from the claimed invention that is directed to *a single trip bar common to all phases* wherein *each phase of the trip bar has a separate magnetic armature disposed thereat.*

In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what the patent Applicant has done, fail to recognize a problem recognized and solved only by the present invention, fail to offer any reasonable expectation of success in combining the References to perform as the claimed invention performs, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

In light of the forgoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §112, second paragraph, and 35 U.S.C. §103(a), have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 06-1130.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,

CANTOR COLBURN LLP

Applicant's Attorneys

By: 

David Arnold
Registration No: 48,894
Customer No. 23413

Address: 55 Griffin Road South, Bloomfield, Connecticut 06002
Telephone: (860) 286-2929
Fax: (860) 286-0115